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# The Spanish organ donation & transplantation Model as a role model for Austria and Germany?

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## ABSTRACT:

Many countries across the globe are facing lack of donor organs. Austria and Germany are among those developed countries that cannot fulfil organ demand. Spain is an exceptional country in this regard and occupies a pioneer role in organ donation and transplantation. The aim of this study was to analyse the particularities of the Spanish Model in comparison to the German and Austrian system and as a consequence to detect indicators to increase organ donation. With the help of a new analytical framework, the single influencing factors have been investigated for the three countries and the key success factors of the Spanish Model have been identified. The subsequent cross-country comparison has shown that both countries Austria and Germany could learn from Spain and adapt three key success factors of the Spanish Model: The implementation of a comprehensive communication policy, the reinforced use of old aged donors and the introduction of a holistic quality assessment program.

## 1 INTRODUCTION

In the year 2011 61,500 people were waiting for a matching graft in the European Union. Thereof 5,500 patients passed away while waiting [1]. Alone in Europe, an average of 12 people die each day as a result of the unavailability of matching organ transplants [2]. In comparison to the 61,500 patients on the waiting list, merely 30,290 organs have been transplanted in the year 2011 [3]. These figures demonstrate that there are far too little organ donations in comparison to the people who are waiting for one and that “a worldwide shortage of suitable organs exist” [4]. The scale of the demand for donor organs is even bigger in reality. Due to the permanent rising life expectancy, new technologies and chronic diseases like diabetes and hypertension the demand for organs, tissues and cells is continuously rising [5]. Thus, the problem is that the organ supply is lower than the actual demand and this gap is increasingly diverging. These circumstances implicate serious consequences, not only for the patient but also for the economy, as alternative therapies like renal dialysis are more expensive in the long run than the expenses for transplantation [6].

Austria and Germany are struggling with a lack of organs in the field of transplantation. As Spain is a pioneer in the field of deceased organ donation, thus other countries could learn a lesson. From the legal perspective Spain and Austria are quite similar with their presumed consent system (opting out). The first-mentioned has a soft and the latter a strict one. Germany has a completely different legal framework with an informed consent system (opting in). Hence, there must be other important and influential factors that have an impact on the number of organ donations [7]. Spanish Model of organ donation has facilitated the country to manage an increase in organ donation rate [8]. Based on this reality, the following research question emerged: “*What aspects of the Spanish Model could be applied to the German and Austrian systems in order to increase the rate of organ donation?*” Before having the ability to answer this question, two other aspects need to be analysed first: The influencing factors of the organ donation rate as well as the success factors of the Spanish Model. With the help of a literature research, these circumstances

have been investigated. Additionally, the model designed by the author helped to conduct the country comparison.

## 2 APPROACH AND USED LITERATURE

The overall research question as well as the sub-questions – “*What factors determine the organ donor rate?*” and “*What makes the Spanish Model so successful?*” – are answered by means of a literature review. Primarily, the influencing factors of the organ donation rate are determined on the basis of relevant literature (see figure 1). Secondly, the best practice model of Spain is also examined through a literature research.

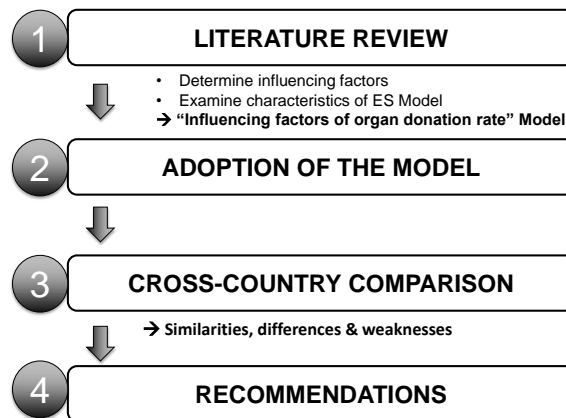


Figure 1. Approach

On the basis of the results and findings of this literature review the influencing factors of organ donation rate Model had been created. This model is applied on the three countries in order to be able to conduct a cross-country comparison between Spain, Austria and Germany. Thereby similarities and differences regarding the compared countries are identified and possible country specific and feasible recommendations are ascertained.

The research is based on following resources: Web pages of trustworthy organisations and institutions, which are closely related to the healthcare sector or to the issue organ donation and transplantation. Among them are: WHO, OECD, Global Observatory on Donation and Transplantation, BZgA, Council of Europe. Additionally, the official web pages of the responsible national coordination agencies in the respective countries plus their most current annual reports are primary sources of information. The three coordination bodies for organ donation and transplantation of Spain, Austria and Germany are the Organización Nacional de Trasplantes (ONT), the Österreichisches Bundesinstitut für Gesundheitswesen (ÖBIG-Transplant) and the Deutsche Stiftung Organtransplantation (DSO). Articles from scientists in the field of Spanish organ donation and transplantation Model (Matesanz), governments accountability in organ donation (Gevers, Janssen, Friele), knowledge about different consent systems (Delmonico, Domínguez-Gil, Matesanz, Noel), knowledge about the Spanish Model (Matesanz, Domínguez-Gil, Coll, De la Rosa & Marazuela and Rodríguez-Arias, Wright & Paredes) have been used.

### 3 INFLUENCING FACTORS OF ORGAN DONATION RATE & SUCCESS FACTORS OF THE SPANISH MODEL

Due to the absence of an already existing theoretical framework with regard to the organ donation rate from a policy perspective, the author has decided to create an own analytical concept so as to find an answer to the sub-research-question “*What factors determine the organ donor rate?*” It is crucial to understand the motives of people in terms of organ donation. The disclosure of these motives can help to inform governments and healthcare organizations how to approach the organ shortage [9]. Hence, the determination of the factors that either directly or indirectly influence the organ donation rate, has to be examined first. The measures and activities to increase the organ donation rate can only be planned and implemented, afterwards [10]. The factors influencing organ donation have been clustered into five major categories, which are illustrated through the pillars of the house: These are legislation, economy, organizational processes, socio-cultural factors and, other factors outside our control (figure 2). The type of legal consent system has some influence on number of organ donors [11]. In general one can observe that nations with an established opting-out system (actively state rejection) have higher levels of organ donations in comparison to countries with an opting-in (actively give consent) system [12]. Furthermore, the number of refusals is higher in opting-in systems compared to opting-out systems [13]. The second factor that has an influence on the deceased organ donation rate is the actual economic development and resources of a country. Additionally, the human development index, which is a prosperity indicator for a country, is heavily associated with the willingness of postmortal organ donation [14]. The existence of a national institution is a crucial factor for the success of the whole organ donation and transplantation system. Well-trained physicians and nurses play a very important role in the identification of possible donors and the generation of grafts [15]. Next to this factor, the number of existing pro-active national donation programmes has an influence on the organ donation rate [16]. Besides, there is a correlation between the potential of organ donation and intensive care, as well as neurosurgery facilities [17]. Another influencing factor is social determinants such as family influence, knowledge and education as well as religion and culture [18]. Other factors, outside our control are the number of road accidents that affect organ donation rate [19].

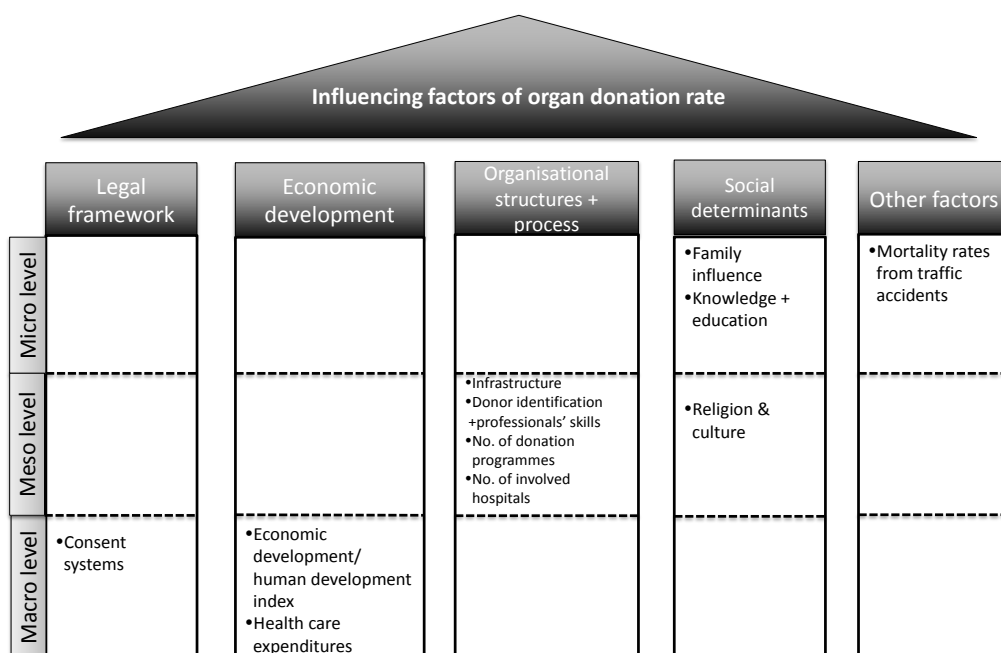


Figure 2. Important factors influencing the availability of organs. Source: Own diagram

It is evident from the above description that the organ donation rate is not only affected by one single determinant but rather from a mixture of various factors. Moreover, the influencing factors are assigned to different levels, namely the micro, meso and macro level.

The examination and ascertainment of the success factors of the Spanish Model, which is stated with the second sub-research-question “*What makes the Spanish Model so successful?*”, is another important step in answering this research question. This is a prerequisite in order to determine if an adaption of the Spanish Model in other countries is possible [20].

The steady increase of the organ donation and transplantation rate in Spain and therewith the overall success of the Spanish organ donation and transplantation system can be ascribed to the implementation of some measures which are largely of an organisational origin. The aggregate of these actions can be summarized under the term “Spanish Model”. The success of the Spanish Model cannot be attributed to so-called “classical” actions to overcome organ shortage such as educational and promotional campaigns or the facilitated documentation of the person’s organ donation will during lifetime. Instead two major features of Spanish Model are better “organisation” and “continuous adaption to change”. Predominately the “systematic and organizational approach” with regards to the deceased organ donation process can be seen as the core principle [21]. The decentralized structure with its different levels of coordination is the essential characteristic of the Spanish Model. The three various levels which coordinate the donation activities are interlinked with each other and are at the national (ONT), regional (17 regions) and hospital level [22].

The following bullet points briefly list the most important key elements of the success of the Spanish Model:

- A Three-tier transplantation coordination network with the national, regional and hospital level [23].
- The ONT as a central support and national coordination agency [24].
- Special features of in-house transplant coordinators such as operating as transplant coordinator on a part-time basis, independence from transplant teams but interconnectedness with national and regional coordinators [25].
- Broad educational programme with diverse types of courses targeting transplant coordinators and the on-going training programmes, which comprise the improvement of the whole organ procurement process [26].
- Establishment of a communication policy which includes transplant procurement agencies information policies which make a point of doing public communication about the issue of organ donation in an outstandingly organised and caring way. Furthermore, a 24 hour telephone hotline for queries, simple access to the media, a good network with journalists and regular meetings between them and recognised professional leaders, the communication of news and messages without go-betweens and the special communication seminars for hospitals and regional coordinators which facilitate dealing with harmful events and promote the approach to the general society [27].
- Quality enhancement through quality assurance programme in the deceased donation process such as regular inspection of the documentation of deaths in intensive care units of procurement hospitals and the implementation of a quality assessment programme with regards to donor detection evaluation [28].
- Increasing utilization of old aged organ donors that leads to an increase in organ donors’ pool [29].

- Hospital reimbursement of donation and transplantation activities. The reimbursed expenses include the material as well as human resources, which make the whole system possible [30].

#### 4 A COMPARATIVE ANALYSIS OF SPAIN, AUSTRIA AND GERMANY

Table 1 depicts the performance of the three various countries regarding the key success factors of the Spanish Model.

**Table 1.** Key success factors of the Spanish Model. Source: Own diagram

ES Model	Spain	Austria	Germany
<b>3-tier transplantation coordination system</b>	✓National, regional, local level	✓National, regional, local level	✓Organ removal, organ allocation & organ transplantation
<b>National coordination agency</b>	✓Organización Nacional de Transplantes	✓Österreichisches Bundesinstitut für Gesundheitswesen	✓Deutsche Stiftung Organtransplantation
<b>Transplant coordinators</b>	✓Local, regional, national	✓Local, regional	✓Local, regional, national
<b>Educational programme</b>	✓Initial & regular training	✓Regular training	✓Initial & regular training
<b>Communication policy</b>	✓Integrated communication policy	✗Programmes for health professionals regarding knowledge & communication skills	✗Programmes for health professionals regarding knowledge & communication skills & telephone helpline
<b>Quality assessment programme</b>	✓Death documentation through internal & external audits	✗Death documentation, but not utilization	✓Data entry form for intensive care units
<b>Old aged organ donors</b>	No. of donors $\geq$ 65: Year 2010: 520	No. of donors $\geq$ 60: Year 2010: 195	No. of donors $\geq$ 65: Year 2010: 393
<b>Hospital reimbursement</b>	Material & human resources	Lump sum for material & human expenses & reimbursement of costs for donor care	Compensation & lump sum remuneration (contains material & human resources)

Spain and Austria have a 3-tier transplantation coordination system whereas Germany does not. It rather has an organisational distinction between organ removal, organ allocation and organ transplantation. However, all three countries have a national coordination agency which develop and coordinate the deceased donation processes within a country. If one has a look at the factor transplant coordinator, one can say that Spain and Germany have transplant coordinators at local, regional and national level; Austria only at local and regional level. Moreover, in the two first-mentioned countries, transplant coordinators receive initial as well as regular training whereas in Austria there is no initial training. Regarding the determinant communication policy, one can say that Spain has established an integrated communication policy. Austria and Germany do not have such an integrated communication policy programme. Only programmes for health professionals regarding knowledge and communication skills are available. In Germany an additional free telephone helpline exists. The sixth success factor of the Spanish Model is a quality assessment programme which includes the following: The examination of death documentation through internal and external audits. The former are conducted through in-house coordinators and the latter through regional transplant coordinators. In Austria, the death documentation exists but these protocols are not evaluated with the aim of quality assessment. In Germany controlling mechanisms exist. There is a data entry form for intensive care units which generates data of deceased persons with brain damage. This document serves as an internal quality management. In the year 2010, Spain had 520 organ donors aged 65 or older, whereas in Germany & Austria the number was 393 and 195 organ donors respectively aged 60

or older. If one divides these numbers through the respective number of inhabitants, one can compare the three countries. A closer look at the older organ donors shows that not Spain with 11.1 has the biggest share of old aged donors but Austria with 23.2. Germany has only 4.79 [31]. The share of old aged donors in Spain is quite big. In Austria there is no data available for donors 65 or older, only for donors 60 or older. This fact is similar in Germany. With respect to hospital reimbursement one can state the following for the three countries: The reimbursed expenses in Spain cover material and human resources. Austrian hospitals receive a lump sum for material and human expenses and additionally reimbursement of costs for donor care. German hospitals obtain a compensation plus a lump sum remuneration, which contains human and material resources.

Based on the comparative analysis one can state, that some elements of the Spanish Model have already been implemented into the Austrian and German system such as:

- Well-trained transplant coordinators on the different organizational levels
- Basic prerequisites for the establishment of a quality assurance programme
- Educational programmes
- National coordination agency

## 5 CONCLUSION

With regards to an adoption of the Spanish Model in Austria and Germany, there is no “one size fits all” solution. Each country has to examine the single factors and decide which parts of the Spanish Model would be applied to cope with the organ shortage. As findings for Austria and Germany are fairly similar, both countries could take a more level encompassing communication policy into consideration in order to enhance the general attitude towards organ donation within the society. Likewise the introduction of a holistic quality assessment programme would be advisable for Austria and Germany. A third factor which Germany could take into account, is the utilization of old aged donors to maximize the potential donor pool.

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